



September 7, 2018

Sent via email

Julie Armitage  
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Kevin Mattison  
Illinois Environmental Protection Agency  
Bureau of Air / Compliance Section  
9511 Harrison Street  
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**Re: Waiver Request of Construction Permit Test Notification Requirements, and Additional Test Protocol Information for Sterigenics Willowbrook I and II Facilities**  
**Facility I.D. No: 043110AAC**

Ms. Armitage and Mr. Mattison:

In our recent conversations, we discussed our shared interest in conducting performance testing of the Willowbrook facilities' control equipment as quickly as possible after recently tying in our sterilization chamber backvents into each facility's existing emission control equipment. This letter formally requests IEPA's waiver of the 30 and 5 day performance test notification requirements found in the project's Construction Permit (Application No. 18060020), at Conditions 6 c. and 6 d. If the waiver of notification requirements is granted, then we would plan to commence performance testing beginning in the morning on Saturday, September 8 at approximately 7:00am at Willowbrook I, 7775 Quincy Street. Testing at Willowbrook II will commence at approximately noon.

This letter also provides additional information regarding the previously submitted test protocol we submitted in our last letter. Based on guidance from Mr. Mattison, this information will serve to provide further details about the planned test procedures and how test results are to be generated. With this additional information, we also request that IEPA grant its approval of the updated test protocol.

Please contact me to further discuss this matter. You can reach me at 630-928-1771 or email: [kwagner@sterigenics.com](mailto:kwagner@sterigenics.com).

Regards,

Kevin Wagner  
Director, EH&S

Enclosures:

# **Test Protocol Addendum for both Willowbrook I and Willowbrook II**

## **2.0 EQUIPMENT**

Process parameters for both AAT emission control devices will be measured prior to testing. One measurement of the scrubber would be representative of scrubber conditions throughout the testing. Based on the total volume of the scrubber liquor, it isn't anticipated that an appreciable change in liquor level or pH will occur over the course of testing. In accordance with the site's air permit the scrubber tank level will be measured along with the liquor pH.

## **3.0 TESTING**

Once a sterilization chamber cycle ends, our process requires the chamber door to be partially opened for 15 minutes which vents the EO in the chamber to reduce levels in the chamber and exposure to employees. The 15-minute duration ensures the highest concentration of EO is removed from the chamber prior to unloading the product. During this venting, EO exhausts thru the backvent and to the AAT scrubber. In accordance with our procedures, workers are not allowed to enter or unload the chamber until the 15-minute time period has passed. Once the 15-minutes has passed, the product is unloaded to the aeration room.

The Willowbrook facility utilizes different sterilization cycles based on FDA validated cycles. The EO concentration in the chamber prior to the backvent phase can vary. Therefore, the higher ending concentrations will represent the highest amount of EO exhausted thru the backvents to the AAT scrubber.

In order to meet Condition 6 of the Construction Permit, each test run will be completed on the backvents using freshly sterilized product from one chamber for a 15-minute duration, for a total of three test runs at each facility. The emission testing will use chambers with higher ending EO concentrations for testing. Each test interval will test the first 15-minutes the backvent is opened and exhausted to the scrubber. Once the 15 minutes ends, product will be unloaded from the chamber and placed into the aeration rooms which are continuously vented to the same AAT scrubber throughout the test.

### **Recording data**

Sterigenics will record process data during the performance testing to identify which chamber was utilized and the sterilization cycle number for each test. This process data will be summarized in a table which will be provided in the final report. In addition to the process data collection, Sterigenics will record pH and scrubber liquor level of the AAT scrubber prior to the test. This information will also be

furnished with the process data in the final report. Due to the AAT scrubber size and design, these parameters do not change significantly during the course of a day which exceeds the performance testing duration.

## **SECTION 5.0 TEST METHOD REFERENCE**

The protocol indicated the CO<sub>2</sub>/O<sub>2</sub> will not be measured, rather the stack will be assumed to be ambient air. The assumed molecular weight of the stack gas will be 29.

### **5.2 VOLUMETRIC FLOW MEASUREMENT**

Method 2C will be utilized to test volumetric flow. The sample port used for the Method 18 inlet and outlet will be used for Method 2C. Please see attached Figure 1 for a drawing of the test locations in accordance with USEPA Method 1 or 1a. The absence of cyclonic flow will be verified during the test program.

### **5.4 SAMPLE TRANSPORT**

In addition to the description of the sample transport in the protocol, the lines used for testing will be heated above 110°C. Source gas will be pumped to the GC with a response time of 5-10 seconds.

### **5.7 CALIBRATIONS**

Calibration will be performed in triplicate prior to and at the end of each test day. Limit of detection will be determined.

## **6.0 TEST SCENARIO**

As discussed above, backvent testing will be performed during normal process load conditions, with freshly sterilized product in the sterilization chambers. Three test runs will be conducted in series to verify the performance of the emission-control system.

Sterilization chamber cycles can range from 8 – 12 hours. Sterigenics will schedule three chambers to end the sterilization cycle to allow for the three test runs to run consecutively, however, due to the range in cycle time, it may be necessary to wait for the chamber cycle to end prior to beginning the subsequent testing.

The sample testing will begin at approximately 7:00 am on Saturday, September 8, 2018. The equipment will be set up Friday evening. Calibration of the chromatograph system will be completed prior to beginning the test at Willowbrook 1 and then again prior to beginning the test at Willowbrook 2.

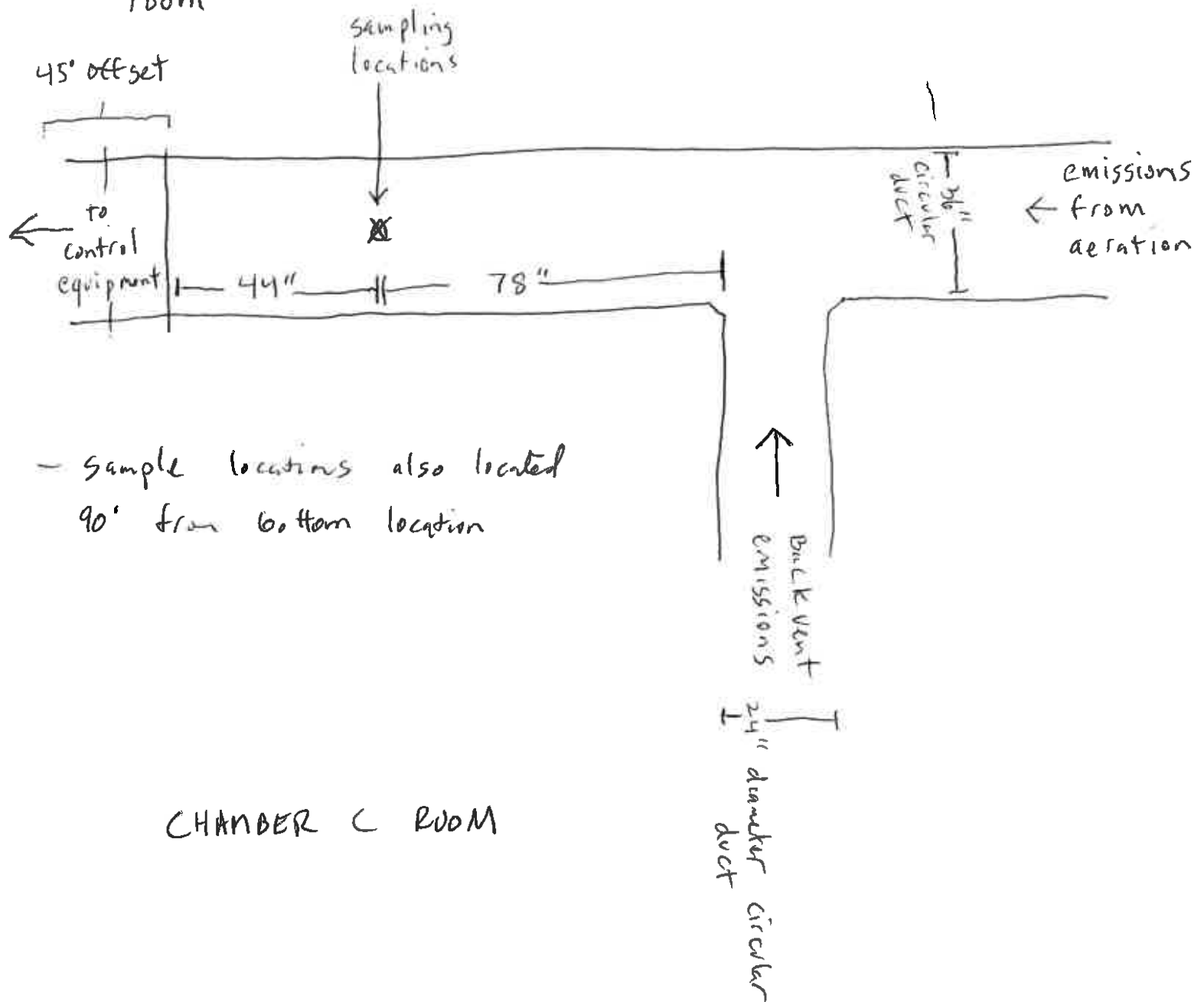
**Test Scenario Time Line**

	<b>Sequence for each facility</b>	<b>Method/Reference</b>
	Sample port locations established	Method 1
	3-point calibration performed in triplicate.	Method 18
	Obtain meteorological data for sampling time. Conduct calculation based on Method 4.	Method 4
<b>SAMPLE 1</b>	Flow traverse of inlet and outlet conducted to establish measurement centroid, confirm absence of cyclonic flow.	Method 2
<b>7:00 am</b>	Chamber door opened, actuator switch activates backvent	N/A
	First sample initiated	Method 18
	Samples at inlet and outlet taken approximately every 1-minute for a total of 15-minutes	Method 18
	Flow monitoring sampled approximately every 1-minute.	
	Recovery study performed	Method 18
Each sample run will follow the same steps as sample 1		
<b>End of 3 samples</b>	Post calibration	

WB I

# INLET TEST LOCATION

- view is looking above at ceiling of chamber C room

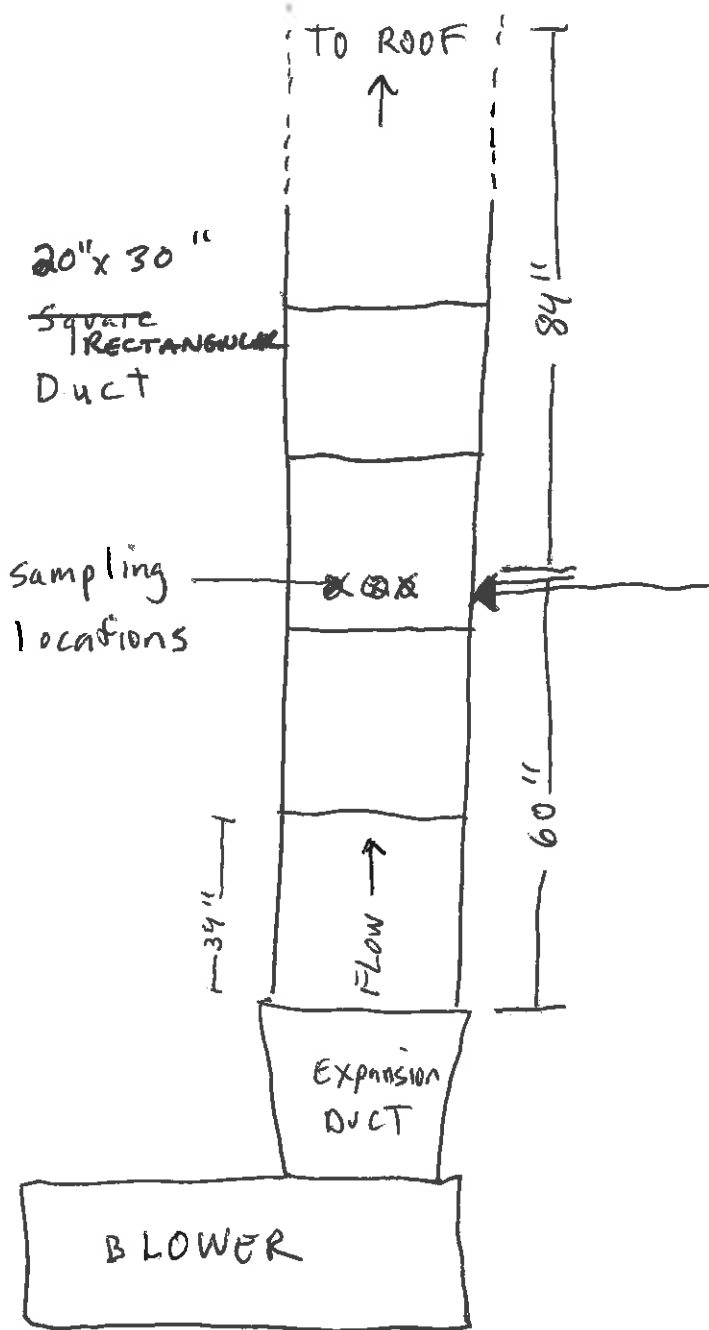


- sample locations also located 90' from bottom location

CHAMBER C ROOM

WB I

OUTLET TEST LOCATION



- Main stretch of ducting  
is 20" x 30" <sup>rectangular</sup> ~~square~~ duct

- Sample prints are located  
84" ~~to~~ <sup>below</sup> top-most disturbance  
and 60" above lowest disturbance

sample locations  
also on side  
of duct

AAT DRYBED ROOM

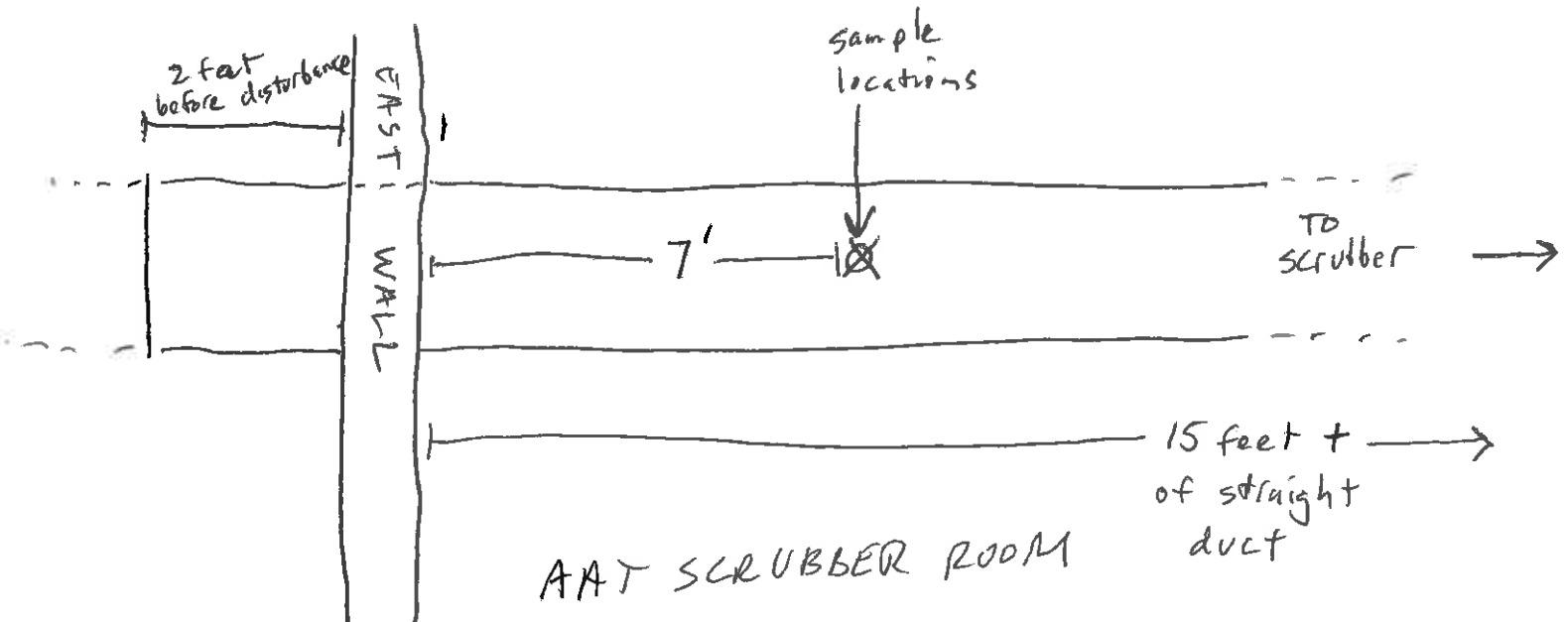
WB II

INLET

TEST

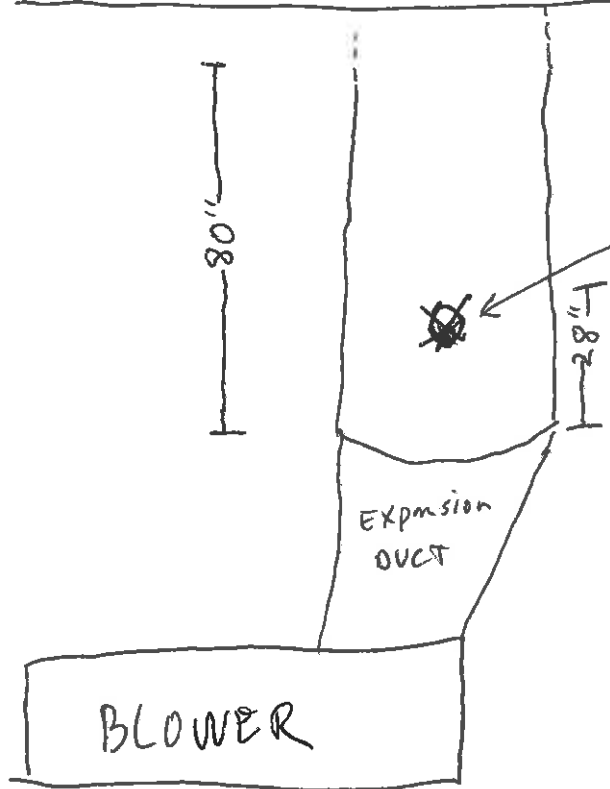
LOCATION

- View is looking up at ceiling of AAT Scrubber Room



- sample locations also located 90' from bottom location

# WB II OUTLET TEST LOCATION



- 28" diameter circular duct

- Sample locations also located 90' from front location

Sample locations

AAT DRY BED ROOM

\* Sample point will be located in straight run. Verified to meet Method prior to test.